



Preparing a National Inventory Improvement Plan

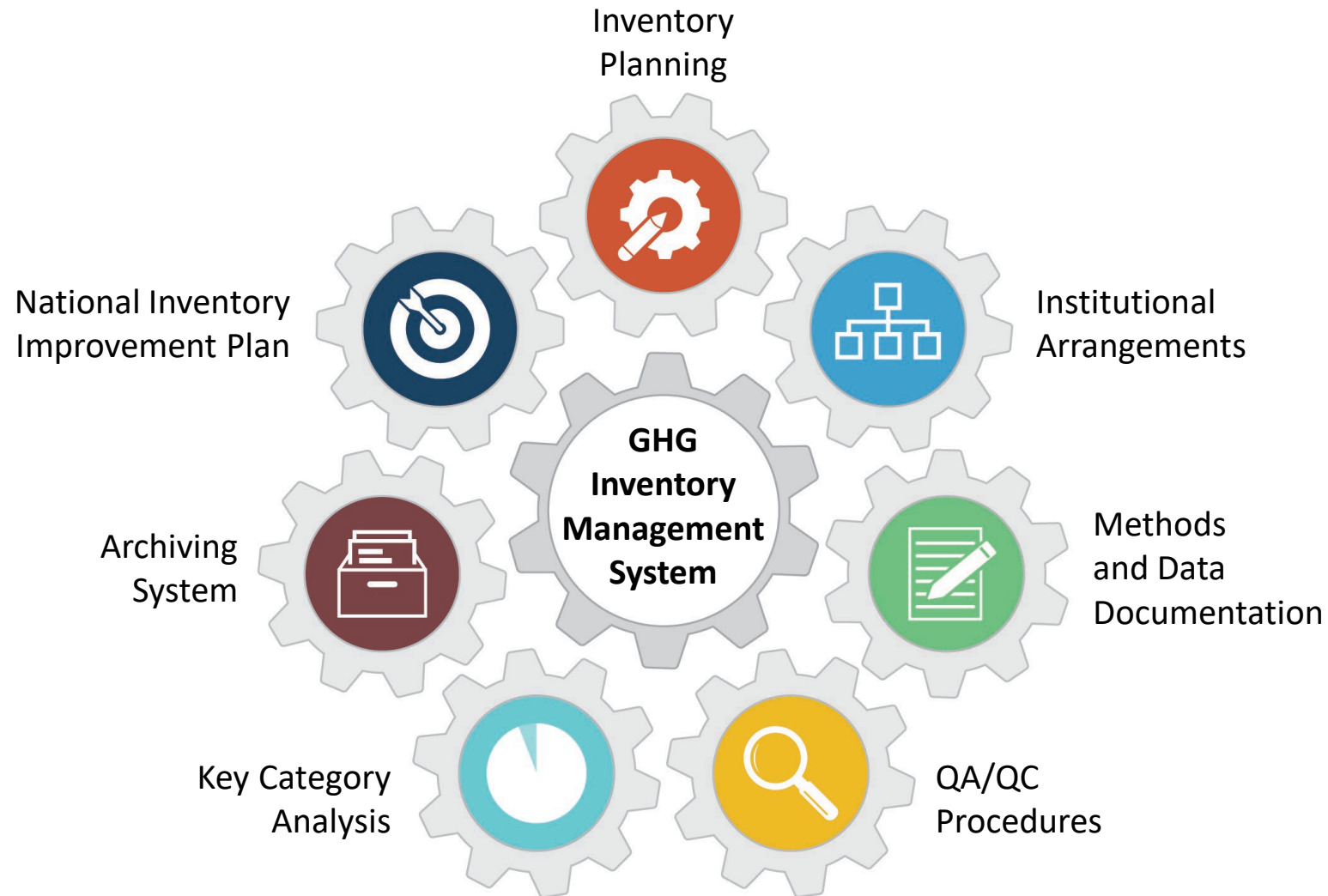
Remote Training on the Building of Sustainable National Greenhouse Gas Inventory
Management Systems

John Steller

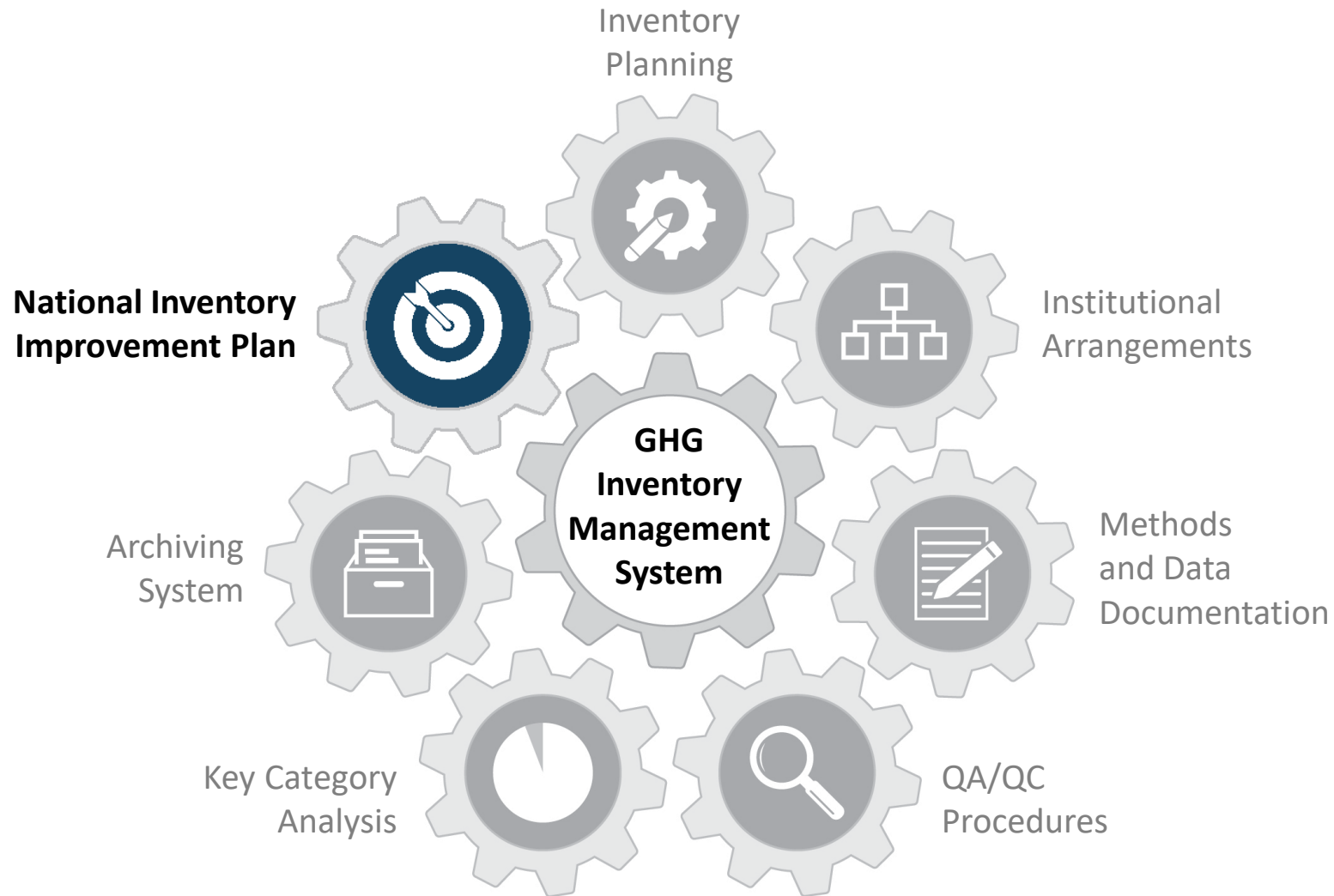
U.S. Environmental Protection Agency

October 11, 2022

Developing a Sustainable National GHG Inventory System



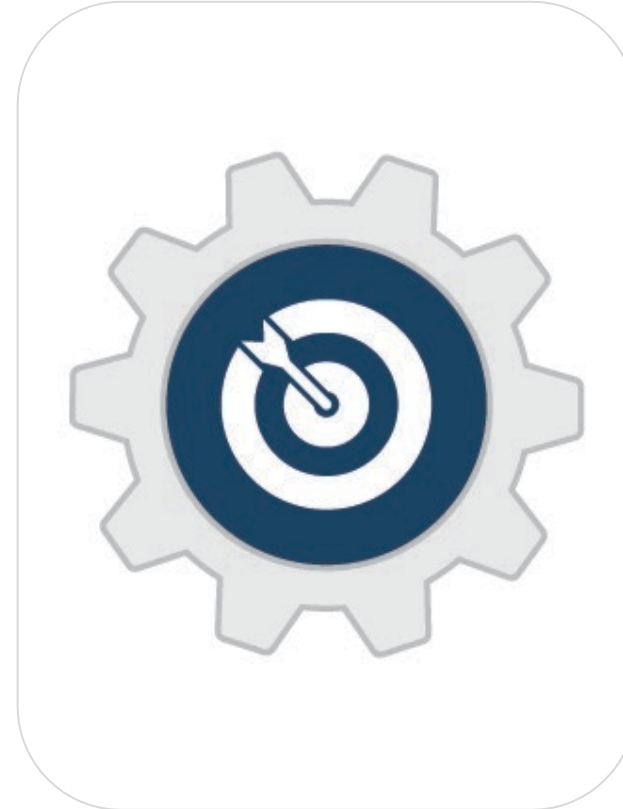
National Inventory Improvement Plan



National Inventory Improvement Plan



What is a National Inventory Improvement Plan?



Review of the Template

The NIIP: Allowing Continual Improvement



The NIIP template gives an inventory team a place to:

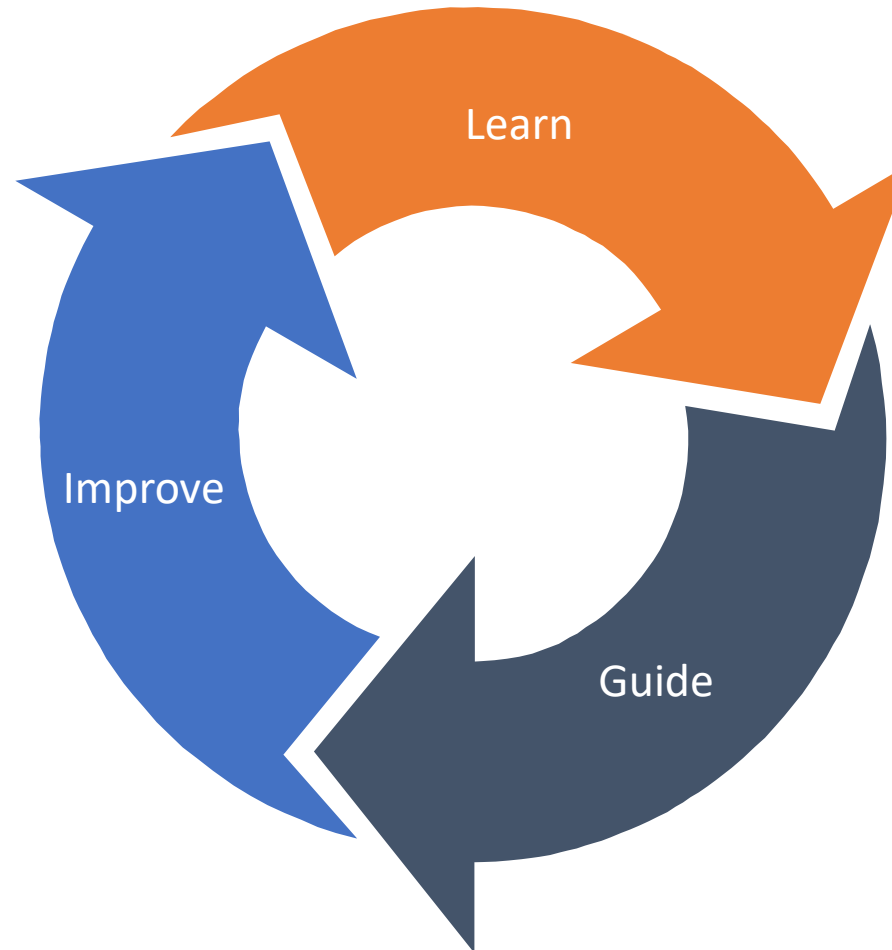
- Compile improvements from other templates
- Identify concrete actions to address improvements
- Prioritize improvements
- Plan implementation of improvement actions



The NIIP: Allowing Continual Improvement



The NIIP will facilitate **continual** inventory improvements over time



Benefits of a National Inventory Improvement Plan



**Identify
availability of
better-quality
data**



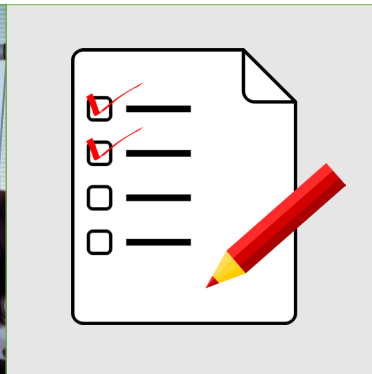
**Facilitate
coordination
among
institutions to
support data
collection efforts**



**Adopt a higher
Tier
methodology**



**Train current
staff members**



**Enhance QA/QC
procedures**



Guide new staff

The background features a central dark grey banner with the title text. Surrounding the banner are several light grey gears of varying sizes. Some gears contain white icons: a target, a pencil, a hierarchy chart, a folder, a document with a pencil, a clock, and a magnifying glass. A large, prominent gear with a target icon is positioned on the right side of the banner.

*National Inventory Improvement
Plan Template*

How this Template Will Help!



The *National Inventory Improvement Plan* template will help the inventory team:



- Record the improvement options from previous templates, including QA/QC findings
- Prioritize improvement projects
- Outline implementation steps/details for high priority projects

Step 0: Review “Default” Introduction in Template



Review and update default introduction to *National Inventory Improvement Plan* included in template



National Inventory Improvement Plan

This National Inventory Improvement Plan (NIIP) presents options for improving the national GHG inventory system to support compilation of a high-quality inventory consistent with the 2006 IPCC Guidelines. The NIIP will guide future efforts to increase the transparency, consistency, comparability, completeness, and accuracy of future inventories. It will inform the overall improvement of the national GHG inventory, including strengthening institutional capacity over the coming years. These improvements have been identified through documentation of existing institutional arrangements, category-by-category analyses of methods and data, QA/QC procedures, key categories, and the archiving system.

Table 7-1 identifies the improvement options for this NIIP and their level of priority. Table 7-2 proposes inventory improvement projects, consisting of the high-priority options from Table 7-1.

STEP 1: Compile the list of improvement options in Table 7-1, below.

Purpose of Table 7-1	To provide a clear overview of the improvement options identified by the inventory team in Templates 2 through 6 and an explanation of the basis of the assigned priority level.
How to use the table when complete	To guide efforts to increase the transparency, accuracy, consistency, comparability, and completeness (TACCC) of future national GHG inventories.
General instructions	Consolidate all improvements listed in Templates 2 through 6 into this table. Ensure that these improvements include enough identified in Templates 2 through 6. Improvements in these categories need to be specific, not general. Improvements that are too general are unlikely to be completed

Who completes this table: National Inventory Coordinator (NIC)

Step 1: Listing Improvement Options from Template 2 through 6

Instructions by column	Key Category: Record "Yes" if the category to which the issue applies is a key category. Record "No" if it is not a key category. Record "N/A" if the issue does not pertain to an individual category.
	Category Code and Name: If the relevant improvement is related to methods and data documentation, record the IPCC code and name of the <u>source</u> or sink category to which this improvement relates. The codes are in the <i>2006 IPCC Guidelines, Volume 1, Chapter 8, Table 8.2</i> , available here: https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol1.html .
	Issue: Describe the issue and why an improvement is recommended.
	Improvement Option: Describe what will be done to address the issue.
	Priority of Improvement: Indicate the priority of the improvement: High, Medium, or Low. Explain why this level of priority is warranted. For example, acquiring activity data for a category that has not been estimated to date but is considered to have substantial emissions, will likely be more important than developing a country-specific emission factor for a non-key category. Consider what your high-level priorities for the GHG inventory should be (e.g., improving completeness, enhancing accuracy with key categories, reducing overall uncertainty, improving time series consistency, increasing transparency, improving data availability, enhancing institutional structures). This may help you decide whether an improvement option should be <u>high-priority</u> .

Table 7-1 Improvement options

No.	Key Category	Category Code and Name	Issue	Improvement Option	Priority of Improvement	Timing of Improvement	Additional Information Needed for Improvement
1							
2							
3							



Who completes this table: National Inventory Coordinator (NIC)

Step 1: Listing Improvement Options from Template 2 through 6

Table 7-1 Improvement options (examples)

No.	Key Category	Category Code and Name	Issue	Improvement Option	Priority of Improvement	Timing of Improvement	Additional Information Needed for Improvement
1		Cross-cutting (Inventory Planning)	Limited time for Inventory cycle (See “Inventory Planning”)	Start the GHG Inventory development cycle 1 month earlier	High	Next Inventory cycle (beginning in June 2022)	Communicating plan needs to begin ASAP
2	Y	1A3b Road Transport-CO2	Required data is not submitted to inventory in time for Expert Review (See “Inst. Arrangements”)	Develop a formal MOU with Department of Transportation to ensure data is provided in a timely manner and format	Medium	Next Inventory cycle (pending signature of MOU)	Use Memorandum of Cooperation (MoC) template as starting point
3	Y	3A1 Enteric Fermentation-Cattle-CH ₄	Shift from Tier 1 methods to Tier 2 given this is key category (See MDD and KCA)	Collect data to implement enhanced characterization or Tier 2 methods consistent with IPCC methodological decision tree and improve accuracy.	High	Longer-term, complete within 2 Inventory cycles, by 2024	See Task 3 in contract with University DC
4		Cross-cutting (Archiving)	No back-up of data (See “Archiving”)	Copy data files from Source Lead computers to a CD or back-up external hard drive	High	At the end of the next inventory cycle	

Who completes this table: National Inventory Coordinator (NIC)



Example of Improvement Prioritization

Table 7-1. Improvement options

No.	Key Category	Category Code and Name	Issue	Improvement Option	Priority of Improvement	Timing of Improvement	Additional Information Needed for Improvement
1	Y	1A3b Road Transport-CO ₂	Use of default fuel carbon contents (See Chapter 3 and 7, MDD and KCA)	Develop country-specific fuel carbon contents to implement Tier 2 method consistent with IPCC methodological decision trees to improve accuracy.	High	Next Inventory Cycle, implement by 2022	Data has already been identified to implement, expert available at University to implement per Task 2 in contract with University DC
2	Y	3A1 Enteric Fermentation-Cattle-CH ₄	Shift from Tier 1 methods to Tier 2 given this is key category (See MDD and KCA)	Collect data to implement enhanced characterization or Tier 2 methods consistent with IPCC methodological decision tree and improve accuracy.	High	Longer-term, complete within 2 Inventory cycles, by 2024	See Task 3 in contract with University DC
4	Y	1A3b Road Transport-CO ₂	Capture of biofuel use in freight trucking (See Chapter 3, MDD)	Collect data to better assess types of biofuel and quantity being used.	Low	Longer-term, complete within 2 Inventory cycles, by 2024	Assessment of biofuel carbon emissions under different technologies
5							
6							
7							
8							
9							

This information was obtained from the Key Category Analysis and Methods and Data Documentation templates



Who completes this table: National Inventory Coordinator (NIC)

Step 2: Detail inventory improvement projects from Step 1 (Table 7-1) that were high priority

Table 7-2. Potential projects for improving the national GHG inventory system

No. (from Table 7-1)	Estimated Staff Time (workdays)	Estimated Cost for Services (local currency)	Estimated Cost of Equipment (local currency)	Reference to Further Information	Responsible Staff



Who completes this table: National Inventory Coordinator (NIC)

Example of Identifying Potential Projects to Implement High-Priority Improvements



Table 7-2. Potential projects for improving the national GHG inventory system

No. (from Table 7-1)	Estimated Staff Time (workdays)	Estimated Cost for Services (local currency)	Estimated Cost of Equipment (local currency)	Reference to Further Information	Responsible Staff
1	60	\$10,000	N/A	See Task 2 in contract with University DC	V. Cambo
2	120	\$15,000	N/A	See Task 3 in contract with University DC	J. Steller

**From Table
7-1**

Upon completion of 7-1 and 7-2, improvement plan is ready to move forward

Improvement Planning in the Inventory Compilation Cycle



Action Items from National Inventory Improvement Plan



1. To save time and effort, identify improvements and issues when completing the other templates, so they can feed into the NIIP.
2. The NIIP facilitates the implementation of improvements over time.
3. Establish the *issue*, the *improvement plan*, the *priority*, and the *timing* of when the improvement needs to happen.
4. Once a plan is established, estimate staff time, cost, when it should be completed be, and who is responsible
 - Position yourself to make efficient use of resources



Having a completed NIIP will:

- Help guide future staff on what improvements to prioritize and what methods have already been used
- Understand where weaknesses might exist in the national inventory system
- Support monitoring of improvement work
- Support use of all templates, as improvement planning helps every step





Thank You For Your Attention!

For more information, email:
ghgi.transparency@epa.gov



Toolkit for Building National GHG Inventory Systems
<https://www.epa.gov/ghgemissions/toolkit-building-national-ghg-inventory-systems>